

REMARKS

This reply is responsive to the Office Action dated March 26, 2004.

Claims 1-4 are pending in the application.

Claims 1-4 are rejected.

New claim 5 is added.

Claims 1-5 remain in the case for reconsideration.

Applicants request reconsideration and allowance of the claims in light of the following remarks.

Claim Rejections – 35 USC § 103

The Examiner rejected Claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,909,056 to Mertol (“Mertol”), in view of U.S. Patent No. 6,369,380 to Hirai (“Hirai”).

Applicant respectfully traverses the rejections.

The Examiner contends that “[it] would have been obvious to one of ordinary skill in the art to use the injection holes of Hirai for the purpose of injecting material into the package.”

However, the features described in Mertol teach away from adding the injection holes of Hirai. The assembly process of the package in Mertol includes attaching a stiffener ring 203, 303 to the top surface of the substrate 206, 306 (col. 4, lines 5-8). Afterwards, the gap between the semiconductor 211 and the stiffener ring 203, 303 is filled with epoxy 210, 310 (col. 4, lines 9-14). Then the heat spreader 200, 300 is clamped to the package during curing (col. 4, lines 14-16). Any injection of material occurs before the heat spreader or lid is put on. Therefore, injection holes for injecting material after the lid is in place are not needed. Therefore, there is no suggestion in either Mertol or Hirai to combine the cited references.

For these reasons, claim 1 is patentable and claims 2-4, which depend therefrom are also allowable for their dependency and their own merits.

New claim 5 recites, “the injection holes comprise a first hole and a second hole, the first hole overlying the dam, the second hole overlying substantially the center portion of the TIM.”

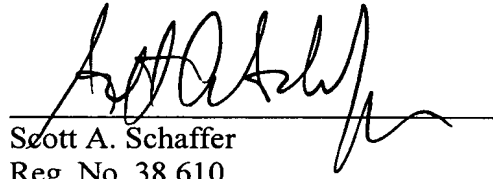
None of the cited references, either alone or in combination, teach or suggest all of the limitations of claim 5. Accordingly, the rejection does not present a *prima facie* case of obviousness. In particular, as discussed above, no injection holes are needed to form the

structure of Mertol. Further, nowhere in Hirai teaches or suggests an injection hole overlying substantially the center portion of the TIM. Therefore, claim 5 is allowable.

For the foregoing reasons, reconsideration and allowance of claims 1-5 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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Date: June 25, 2004



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